IN THE CLAIMS:

Please amend the claims as rewritten below.

Claim 1. (Currently Amended) A method for determining ~~any significant~~ bone density loss in a human patient, comprising:

storing in an electronic storage medium, as reference values, measurement values of one of real ~~or~~ and mathematically simulated bone density loss processes, as a function of time, the measurement values being ~~of~~ determined according to one of medically accepted practical ~~or~~ and theoretical clinical signs and symptoms of bone density loss [[,]] ;

measuring bone marker values of one of serum ~~or~~ and urine samples of the patient associated with bone density losses [[,]] ;

recording the bone marker values over an input mask in an electronic data memory [[, and , by the following steps,]] ; and

processing the bone marker values relative to the reference values [[thereby]] to determine ~~any significant~~ bone density loss in the patient [[:]] , said processing comprising performing the following sub-steps of:

a) ~~at the time of the analysis,~~ copying all N available measured bone marker values M of the patient ~~which were~~ , measured at times $t_1 \ldots t_n$, from the

electronic data memory, over an interrogation function, ~~thereby~~ to make the measured values available for further processing, such that measured bone marker values M (t_n; k) of K are determined in the laboratory ~~being determined~~ after process step x ~~of the process~~ , at times t_1 ... t_n [[,]] ;

b) normalizing the measured values of the bone markers with respect to a first line in a table of values, determined according to the equation

$$M^*(t_n;k) = \frac{M(t_n;k) - M(t_1;k)}{M(t_1;k)} \qquad k = 1,...,K; \quad n = 1,...,N$$

to form normalized values of the bone markers, and converting the ~~measurements as a function of time~~ normalized values into time values, measured in units of months,

c) converting the normalized ~~measured value being converted~~ values into a scalar quantity $D(t_n)$ ~~for~~ to obtain a ~~graduated~~ description of ~~the~~ a graduated course of ~~the~~ bone density loss, said description of the graduated course of bone density loss being defined by the equation

$$D(t_n) = \sqrt{\sum_{k=1}^{K} Wk \cdot \left(M^*(t_n;k)\right)^2}$$

~~defining the graduated description of the course of the relationship~~

d) calculating, from ~~the~~ evaluations of the ~~progress determined~~ course of bone density loss, ~~calculating by interpolation evaluations~~ interpolated values of the ~~progress~~ course, for ~~those~~ time ~~sections of~~ periods for which reference values are available, according to the equation

$$D^*(t) = \frac{(t_n - t)\cdot D(n-1) + (t - t_{n-1})\cdot D(n)}{t_n - t_{n-1}} \quad , t_\in [t_{n-1}, t_n]$$

~~for which reference values are available;~~ ;

e) calculating, from the interpolated ~~evaluations of the progress~~ values of the course of bone density loss, ~~calculating~~ values of a first similarity ~~dimensions~~ dimension between ~~the~~ data ~~by means of~~ being investigated and all available reference values, according to the function

$$A_j(t) = \sum_{m=1}^{M} \frac{t_m}{t_M} \cdot V_m \cdot \left(R_j(t_m - D^*(t_m)\right)^2$$

~~said function of this paragraph (e) being used to calculate a similarity dimension between the data, which is to be investigated, and all the reference values, available in the database~~ and [[, at the same time,]] simultaneously calculating values of a second similarity ~~dimensions to~~ dimension between the reference values and ~~to~~ the previously determined values of time, measured in units of months ~~being found;~~ ;

f) determining, from the first and second similarity dimensions, for all reference values, ~~determining those~~ a mathematical similarity for each of said reference values ~~which have a high similarity in the mathematical sense, as follows~~ according to one of the following type descriptions, determined from the respective accompanying formula:

greatest similarity: $$A^* = \min_{j=1,\ldots,J}\{A_j\}$$

positive alternative (+) $$A^+ = \min_{j=1,\ldots,J, A_j > A^*, R_{j(IN)} > I_{X(IN)}}\{A_j\}$$

negative alternative (-) $$A^- = \min_{j=1,\ldots,J, A_j > A^*, R_{j(IN)} < I_{X(IN)}}\{A_j\}$$

~~with subsequent output of the type description as text component for describing the situation~~ and outputting the type description for each given situation;

g) deriving a predicted value from ~~the three~~ reference values ~~of paragraph~~ for each of the type descriptions determined according to the three formulas in sub-step (f), and, such that if $B_1 = A^*$, $B_2 = A^+$, $B_3 = A^-$, using the following expression

$$R(t) = \frac{1}{\sum_{i=1}^{3} B_i} \cdot \sum_{j=1}^{3} \left(\left(\sum_{i=1}^{3} B_i - B_j \right) \cdot R_j(t) \right)$$

~~being used~~ for the predicted value at time t;

h) optimizing a quantitative prediction of the bone density loss by assigning standard specifications to degrees of freedom given as functional parameters in ~~the~~ a functional relation ~~of~~ between $D(t_n)$ and $A_j(t)$; and ~~fitting by~~ performing a statistical analysis ~~of~~ to determine goodness of fit between the reference values ~~to practical~~ and values obtained from actual experience; and

i) calculating ~~the~~ a value of a time at which, according to said quantitative prediction, ~~the~~ a percentage deviation is greater than a specified threshold value, ~~this~~ said calculated value of time being ~~the~~ a starting point for planning scheduling of a next investigation.

Claim 2. (Amended) The method of claim 1, wherein ~~the~~ degrees of

freedom, given as function parameters in ~~the~~ said functional ~~relationship of~~ relation between $D(t_n)$ and $A_j(t)$, are ~~filled in~~ provided by ~~the~~ a mathematical method of least squares, so that specified sequences are taken into consideration in ~~a best~~ an optimum way for reference values.

Claim 3. (Currently Amended and Withdrawn) The method of claim 1, wherein the reference values are calculated values, calculated from an analytical mathematically assumed course of bone density loss.

Claim 4. (Currently Amended and Withdrawn) The method of claim 1, wherein the reference values are empirical values from ~~imaginary~~ hypothetical, assumed processes.

Claim 5. (Currently Amended) The method of claim 1, wherein the reference values are ~~concrete~~ actual values obtained from patients with known amounts of ~~loss of~~ bone density loss.